

**AMENDMENTS TO THE SPECIFICATION:**

**Please amend the title as follows:**

~~FALSE UNAUTHORIZED-ALTERATION DETECTING METHOD, FALSE ALTERATION UNAUTHORIZED-ALTERATION DETECTING PROGRAM, AND RECORDED RECORDING MEDIUM ON WHICH HAVING RECORDED~~ THE PROGRAM IS RECORDED

**On page 1 after the title, please insert the following:**

**CROSS - REFERENCE TO RELATED APPLICATIONS**

The present Application is based on International Application No. PCT/JP2003/013772, filed on October 28, 2003, which in turn corresponds to JP 2002-315391 filed on October 30, 2002, and priority is hereby claimed under 35 USC §119 based on these applications. Each of these applications are hereby incorporated by reference in their entirety into the present application.

**Please amend the third paragraph on page 23 as follows:**

Next, the processing section 1 calculates  $\delta$  (S111) by using the obtained  $F_{ij}(x', y')$  and  $g_{ij}$  according to expression (9), described above. The processing section 1 calculates the number-theoretic-transformed block  $H_{ij}(x, y)$  of the embedding-applied image block by using the number-theoretic-transformed block  $F_{ij}(x, y)$  of the original-image block and  $\delta$  obtained in step S111, according to expression (8) (S113). Then, the processing section 1 calculates the inverse-number-theoretic-transformed ~~embedded~~ embedding-applied image block  $h_{ij}(x, y)$  of  $H_{ij}(x, y)$  by using expressions (1) and (2),

**Please amend the fifth paragraph on page 24 as follows:**

The processing section 1 stores the obtained embedding-applied image block  $h_{ij}(x, y)$  at an appropriate area (work area or others) in the storage section 5 (S117). When steps S101 to S117, described above, have been executed for all blocks (or blocks in a desired area), the processing section 1 proceeds to step S121. If not (S119), the processing section 1 returns to step [[S103]] S101, and subsequent steps are repeated. The processing section 1 executes the above-described steps for all the blocks (or the blocks in the desired area) to obtain an embedding-applied image [h]. The processing section 1 saves the number-theoretic-transform parameter P and the embedding-applied image [h] into the embedding-applied image file 54 (S121). The processing section 1 transmits the parameter P and the embedding-applied image [h] to the receiving-side apparatus through the interface 6 or the output section 3 (S123). The processing section 1 may transmit N as a parameter, if necessary. Step S121 and step S123 are executed in parallel

**Please amend the third paragraph on page 27 as follows:**

Fig. 10 is a view showing images used for experiments. Fig. 10(a) shows the ~~current~~ original image and Fig. 10(B) shows a signature image. The present invention was applied to text (256 by 256 pixels, 8-bit gradations), which is a standard image of SIDBA, such as that shown Fig. 10(a), and effectiveness was examined. As number-theoretic-transform parameters serving as keys,  $P = 85,147,693$  and  $N = 4$  were used, and the signature image shown in Fig. 10(b) (64 by 64 pixels, 1-bit gradation) was used. Embedding strength  $\varepsilon$  was set to 5. The following functions were used as the randomizing functions  $r_x$  and  $r_y$  as the most simple examples.